

Application Serial No. 10/779,415  
Reply to office action of July 9, 1007

PATENT  
Docket: CU-3570

### REMARKS/ARGUMENTS

Reconsideration is respectfully requested.

Claims 1-8 are pending before this amendment.

In the office action (page 3), claims 1 and 3 stand rejected under 35 U.S.C. § 103(a) as being obvious over U.S. Patent No. 5,812,607 (Hutchinson) in view of U.S. Patent No. 5,471,209 (Sutterlin). Any suffix including "et al." is omitted in a reference name.

The applicant **disagrees** and asserts respectfully that there is no motivation or suggestion to apply the teachings of Sutterlin to Hutchinson.

Hutchinson col. 5, lines 2-4, discloses that "Within an RF transmitter 64 the resultant analog FM modulation signal directly modulates the frequency of an intermediate frequency carrier." That is, Hutchinson teaches clearly that a carrier wave is modulated in the RF transmitter 64 by an analog FM modulation signal, and therefore there is no rational reason or motivation to perform 1-bit quantization on the modulated signal obtained as a result of the FM modulation before its transmission within the RF transmitter 64.

According to MPEP 2.143.01VI, any proposed modification **cannot** change the principles of operation of a reference:

"If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *pima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)."

Here, applying the alleged 1-bit quantization of Sutterlin to Hutchinson would **change** the principle of operation of Hutchinson, because the RF transmitter 64 is

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prevented from transmitting the modulated signal. Accordingly, it is respectfully submitted that the obviousness rejection of independent claims 1 and 3 based on Hutchinson and Sutterlin is without merit and cannot stand the test of the prima facie case of obviousness.

Further, the specification page 19, line 25 to page 20, line 10 discloses as follows:

"According to this embodiment, a transmission signal (a signal to be transmitted) is subjected to frequency modulation and 1-bit quantization to be converted into digital data, and is transmitted as digital data. The transmitted digital data is directly subjected to FM demodulation, thereby demodulating the transmission signal. Accordingly, there is no need to compress the transmission signal or convert the transmission signal into packets. That is, the digital data can be transmitted without performing complicated processing such as compression, and the receiver side can restore the original transmission signal by directly demodulating the received digital data according to frequency modulation. Accordingly, complicated processing such as compression and decompression of the digital data are unnecessary on the transmitter and receiver ends. Therefore, signal transmission delay can be minimized. Therefore, digital transmission can be performed with reduced delay with an extremely simple configuration, thus reducing costs."

Thus, the remarkable effects as described above are produced by the embodiments of the present invention. These remarkable effects are the evidence of the non-obviousness of the claimed inventions over a mere combination of Hutchinson and Sutterlin, even if Hutchinson and Sutterlin were to be combined for whatever reason since the proposed combination cannot produce those remarkable effects of the present invention (besides the fact that the principle of operation will be altered).

Further, FIG. 1 of Hutchinson merely discloses "the digital FM processing chain of transmitter 14" (col. 4, lines 49-50). That is, Hutchinson does not teach or suggest use of an analog-to-digital converter. Therefore, basically, there is no motivation for

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Hutchinson to refer to Sutterlin, which discloses a sigma-delta A/D converter, so as to single out alleged 1-bit quantization therefrom. Thus, it is respectfully submitted that the Sutterlin is improperly combined with Hutchinson due to apparent ignorance of the remarkable effects of the present invention as described above, such that the obviousness rejection of independent claims 1 and 3 is based on an "improper hindsight" reasoning.

Claims 2 and 4-5 stand rejected under 35 U.S.C. § 103(a) as being obvious over Hutchinson in view of Sutterlin and further in view of U.S. Patent No. 5,579,060 (Elberbaum).

The applicant respectfully submits that claims 2 and 4-5 are allowable at least since they from the base claim 1, which is now considered to be in condition for allowance for the reasons above.

For the reasons set forth above, the applicant respectfully submit that claims 1-5 pending in this application are in condition for allowance over the cited references. Accordingly, the applicant respectfully requests reconsideration and withdrawal of the outstanding rejections and earnestly solicits an indication of allowable subject matter.

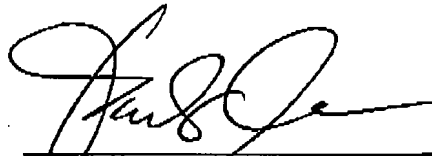
This amendment is considered to be responsive to all points raised in the office action. Should the examiner have any remaining questions or concerns, the examiner

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is encouraged to contact the undersigned attorney by telephone to expeditiously resolve such concerns.

Respectfully submitted,



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